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**UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

AMERICAN FEDERATION OF GOVERNMENT
EMPLOYEES, AFL-CIO; AMERICAN
FEDERATION OF STATE COUNTY and
MUNICIPAL EMPLOYEES, AFL-CIO, et al.,

Plaintiffs,

V.

UNITED STATES OFFICE OF PERSONNEL
MANAGEMENT, *et al.*,

Defendants.

Case No. 3:25-cv-01780-WHA

**MEMORANDUM OF LAW OF
AMERICAN PHYSICAL SOCIETY
AS *AMICUS CURIAE* SUPPORTING
PLAINTIFFS' REQUEST FOR
PRELIMINARY RELIEF**

Date: March 13, 2025
Time: 8:00 A.M.
Judge: Honorable William H. Alsup

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STATEMENT OF INTEREST OF AMICUS CURIAE

The American Physical Society (“APS”) is a nonprofit membership organization working to advance physics and foster a community dedicated to science and society. APS’s members include professional scientists, early-career scientists, science faculty, and science students (collectively, “STEM professionals”), many of whom previously held or currently hold positions at various federal departments and agencies, such as the National Science Foundation (“NSF”), National Institutes of Health, Food and Drug Administration, U.S. Department of Health and Human Services (“HHS”), National Institute of Standards and Technology, U.S. Department of Energy (“DoE”), National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, and U.S. Department of Defense (collectively “federal science agencies”). Many of APS’s members have been directly affected by the Office of Personnel and Management’s (“OPM”) directive to federal agencies to evaluate the employment of probationary employees, which resulted in those agencies abruptly terminating the jobs of thousands of federal employees. Accordingly, APS files this brief on behalf of its members who have been directly affected by the widespread terminations.

INTRODUCTION

OPM’s recent directives to federal agencies instruct them to identify all probationary employees, report a list of such employees to OPM, and “promptly determine whether those employees should be retained at the agency.”¹ In the wake of OPM’s initial directive, issued on January 20, 2025, federal agencies have indiscriminately terminated the jobs of thousands of federal employees with little to no advance notice. Alarming reports indicate that in February, NSF fired approximately 10% of its employees, many of whom were program officers and subject matter experts who managed various research grants and made funding decisions for those grants (although some were later rehired).² The

¹ See Off. of Personnel Mgmt., *Guidance on Probationary Periods, Administrative Leave and Details* (2025), <https://www.opm.gov/media/yh3bv2fs/guidance-on-probationary-periods-administrative-leave-and-details-1-20-2025-final.pdf>.

² See Jonathan Lambert, *National Science Foundation Fires Roughly 10% of Its Workforce*, NPR (Feb. 18, 2025), <https://www.npr.org/2025/02/18/nx-s1-5301049/national-science-foundation-fires-roughly-10-of-its-workforce>. Although there are reports of some NSF employees being rehired after this Court's

federal government's purported rationale for this and similar drastic measures is that the terminations will "enhance accountability, reduce waste, . . . promote innovation . . . [and] restore efficiency," but there is no compelling evidence that these terminations advance any of those goals.³ Quite the opposite: many of the federal science agencies are already viewed as among the most efficient agencies in the federal government in part because they operate with low administrative costs, maintain a strategic focus on their mission objectives, and ensure full transparency in their operations.⁴

Moreover, contrary to the intended goals of this unprecedented federal workforce reduction, the loss of talented STEM professionals from federal science agencies will adversely affect the quality and quantity of the trained technical workforce and stifle the innovations that are crucial in maintaining the U.S.'s scientific leadership, economy, and national security. APS therefore supports Plaintiffs' request that this Court restore the federal employment of fired STEM professionals and enjoin Defendants from taking further indiscriminate actions to terminate the federal employment of such individuals.

temporary restraining order, many have not been. *See Jeffrey Mervis, NSF Brings Back 84 Fired Workers After Judge Blocks White House-Ordered Dismissals, Science* (Mar. 3, 2025), <https://www.science.org/content/article/nsf-brings-back-84-fired-workers-after-judge-blocks-white-house-ordered-dismissals> (explaining that while 84 employees will be going back to work at NSF, 86 fired workers will not).

³ White House, *Fact Sheet: President Donald J. Trump Reduces the Federal Bureaucracy* (Feb. 19, 2025), <https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-reduces-the-federal-bureaucracy>; *see also* White House, *Fact Sheet: President Donald J. Trump Works to Remake America's Federal Workforce* (Feb. 11, 2025), <https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-works-to-remake-americas-federal-workforce>.

⁴ Cf. Philip Rossetti, Sejla Avdic, *How to Get the Most Out of the Government's Research Spending*, American Action Forum (Nov. 16, 2018), <https://www.americanactionforum.org/research/how-to-get-the-most-out-of-the-governments-research-spending> (describing that DoE has a "high productivity of innovation" and that "energy programs . . . are currently among the most efficient").

ARGUMENT

I. There Is No Evidence That the Terminations at Federal Science Agencies Increase Government Efficiency or Reduce Any Waste.

President Trump has recently touted his efforts to “shrink[] the federal government” in order to “restore efficiency” and “reduce waste” in the government.⁵ APS recognizes that “operational efficiency is undoubtedly a vital government interest,” but there is no indication or reason to believe that maintaining the employment of federal scientists and other STEM professionals was “so threatening to the efficiency of the entire federal service as to render” OPM’s directive a “reasonable response” to any legitimate concerns about efficiency. *United States v. Nat’l Treasury Emps. Union*, 513 U.S. 454, 473 (1995). In fact, all indications are to the contrary—broadscale elimination of federally employed scientists will undermine efficiency and create, rather than reduce, waste.

“Operational efficiency” is defined as “[t]he capability of an enterprise to deliver products or services to its customers in the most cost-effective manner possible while still ensuring the high quality of its products, service, and support.” *Operational Efficiency*, Black’s Law Dictionary (12th ed. 2024); cf. also *United States v. Martinez-Guerrero*, 987 F.2d 618, 621 (9th Cir. 1993) (Ferguson, J., concurring) (“A determination of efficiency, by definition, requires a preliminary determination of the relevant goal to be achieved without waste.”). “Waste,” accordingly, is defined as the “thoughtless or careless expenditure, mismanagement, or abuse of resources to the detriment (or potential detriment) of the U.S. government.”⁶

With these definitions in mind, it is apparent that federal science agencies already operate at high levels of efficiency and are diligent in managing resources to limit any waste. For example, NSF is an “efficient, effective, agile and forward-looking organization” that “continually reexamines its

⁵ *Supra*, note 3.

⁶ Off. of Inspector General, *What Is Considered Fraud, Waste, or Abuse?*, USAID (Apr. 16, 2018), <https://oig.usaid.gov/node/221>; see also U.S. Gov’t Accountability Off., *Fraud, Waste, Abuse, and Mismanagement*, <https://www.gao.gov/assets/680/676651.pdf> (last visited Mar. 10, 2025) (defining “waste” as “squandering money or resources, even if not explicitly illegal” (capitalization altered)).

1 organizational structure and processes to make sure that they adapt and scale,” ensuring “enhance[d]
 2 performance of NSF’s mission.”⁷ To this end, NSF’s strategic goals and objectives include various
 3 initiatives aimed at improving efficiency by, for example, “reducing administrative burden,” incorporating
 4 “new technologies,” and “assessing performance and impact.”⁸ NSF’s financial performance underscores
 5 its success in achieving those very goals: NSF spends only 5% of its total budget on administrative costs
 6 like operations and award management, with the bulk of its funding (79%) spent on critical science work
 7 such as “early-stage research and the development of a future-focused science and engineering
 8 workforce.”⁹

9 Central to NSF’s success is its ability to efficiently identify promising research proposals in the
 10 specialized scientific and technical areas covered by the agency. Over the last several decades, NSF has
 11 developed a robust peer-review culture and processes to evaluate research proposals that leverage sizeable
 12 volunteer support. Those streamlined processes help NSF maintain low administrative costs: almost
 13 32,000 members of the STEM community voluntarily participate in the NSF merit-review process (which
 14 is used to make funding decisions), resulting in NSF evaluating more than 40,000 proposals and
 15 supporting more than 11,000 new awards.¹⁰ For example, in fiscal year 2022 alone, unpaid volunteers
 16 wrote more than 169,000 reviews.¹¹

17 In the face of this evidence of NSF’s well-oiled efficiency, the government provides no contrary
 18 evidence that NSF or other federal science agencies are inefficient or that mass terminations, particularly
 19 of probationary employees, reduce any government waste. Probationary employees are relatively new
 20
 21

22 ⁷ U.S. Nat’l Science Found., *2022-2026 Strategic Plan* at 45, 49, <https://nsf.gov-resources.nsf.gov/pubs/2022/nsf22068/nsf22068.pdf> (last visited Mar. 10, 2025).

23 ⁸ *Id.* at 45–47 (capitalization altered).

24 ⁹ U.S. Nat’l Science Found., *FY2024 Agency Financial Support* at 12, <https://nsf.gov-resources.nsf.gov/pubs/2025/nsf25002/pdf/nsf25002.pdf> (last visited Mar. 10, 2025).

25 ¹⁰ *See id.*

26 ¹¹ U.S. Nat’l Science Found., *Merit Review Process Fiscal Year 2021* at 10 (June 2023), https://nsf.gov-resources.nsf.gov/nsb/publications/2022/merit_review/nsb202314.pdf.

additions to the workforce whose probationary status allows agencies to ensure their “fitness for the job.”¹² But there is nothing about the probationary status on its own that suggests that probationary employees would be any less efficient than other employees. Using a broad-based criterion (like probationary status) that has no connection to any metric of efficiency or waste to determine whom to fire will have the predictable effect of creating waste and introducing inefficiencies.

II. There Is No Evidence That the Terminations at Federal Science Agencies Reduce Any Abuse of Government Resources or Any Fraud.

APS similarly recognizes that the interest in “federal officers not misus[ing] or appear[ing] to misuse power . . . is undeniably powerful”; but here, too, the government “cites no evidence of misconduct” or fraud to justify the sweeping terminations. *Nat'l Treasury Emps. Union*, 513 U.S. at 472. “Fraud” commonly refers to “the wrongful or criminal deception intended to result in financial or personal gain.”¹³ Mechanisms like annual audits, which can reveal inconsistencies or other material missteps in financial statements, can help detect fraud at the organizational level. *See* U.S. Sec. and Exch. Comm'n, *The Auditor's Responsibility for Fraud Detection* (Oct. 11, 2022), <https://www.sec.gov/newsroom/speeches-statements/munter-statement-fraud-detection-101122>.

Here, NSF's Office of Audits, Inspections, and Evaluations provides “independent and objective assessments of NSF's programs and operations and examines grants, contracts, and cooperative agreements funded by NSF.”¹⁴ Moreover, independent external auditors conduct thorough audits of NSF, and the most recent audit “identified no material weaknesses” and “no reportable instances of noncompliance with provisions of laws, regulations, contracts, and grant agreements tested or other

¹² Off. of Personnel Mgmt., *Practical Tips for Supervisors of Probationers*, <https://www.opm.gov/policy-data-oversight/hiring-information/practical-tips-for-supervisors-of-probationers> (last visited Mar. 10, 2025).

¹³ Off. of Inspector General, *supra*, note 6; *see also Fraud*, Black's Law Dictionary (12th ed. 2024) (defining fraud as “any kind of artifice by which another is deceived” (emphasis and internal quotation marks omitted) (quoting John Willard, *A Treatise on Equity Jurisprudence* 147 (Platt Potter ed., 1879))).

¹⁴ U.S. Nat'l Science Found., *Fiscal Year 2025 Oversight Plan* at 1 (Nov. 21, 2024), <https://oig.nsf.gov/sites/default/files/reports/2024-11/FY%25202025%2520Oversight%2520Plan.pdf>.

1 matters.”¹⁵ In other words, the audit found no evidence of fraud. These results are consistent with NSF’s
 2 distinguished record of clean audits for twenty-six consecutive years.¹⁶ And NSF is not alone in that
 3 achievement as other federal science agencies, like HHS, have similarly maintained a clean audit record
 4 for twenty-six years.¹⁷

5 There is also no indication that the abrupt terminations at issue were designed to reduce or will
 6 have the effect of reducing any abuse of government resources. The U.S. Government Accountability
 7 Office defines “abuse” as “behaving improperly or unreasonably, or misusing one’s position or
 8 authority.”¹⁸ Acting contrary to an organization’s mission, for example, can be indicative of an abuse of
 9 resources and authority. *Cf.* 41 U.S.C. § 4712(g)(1) (defining “abuse of authority” as “an arbitrary and
 10 capricious exercise of authority that is inconsistent with the mission of the executive agency
 11 concerned”); *United States v. Villarreal*, 725 F. App’x 515, 517 (9th Cir. 2018) (noting that acting
 12 “directly contrary to the mission of” an organization may indicate “abuse of . . . official positions”).

13 NSF’s mission is to “promote[] the progress of science by investing in research to expand
 14 knowledge in science, engineering and education,” and it accordingly “invests in actions that increase the
 15 capacity of the U.S. to conduct and exploit such research.”¹⁹ There is no evidence that NSF has strayed
 16 from this important mission or that the fired employees abused their authority or government resources in
 17 any way. That is hardly surprising as NSF has several mechanisms in place guiding the agency’s
 18 systematic progress on its mission while ensuring meaningful independent oversight of its activities. To
 19 begin, NSF engages in robust strategic planning every five years in collaboration with the broader STEM

21 ¹⁵ U.S. Nat’l Science Found., *Audit of the U.S. National Science Foundation’s Fiscal Years 2024 and 2023*
 22 *Financial Statements* at 2, 4 (Nov. 13, 2024), <https://oig.nsf.gov/sites/default/files/reports/2024-11/25-02-003%2520-%25202024%2520NSF%2520Financial%2520Statement%2520Audit%2520-%2520public.pdf>.

23 ¹⁶ U.S. Nat’l Science Found., *FY 2023 Performance and Financial Highlights* at 2 (Mar. 11, 2024),
 24 <https://nsf-gov-resources.nsf.gov/pubs/2024/nsf24003/nsf24003.pdf>.

25 ¹⁷ U.S. Dep’t of Health and Human Servs., *Fiscal Year 2024 Agency Financial Report* at 2 (Nov. 14,
 26 2024), <https://www.hhs.gov/sites/default/files/fy-2024-hhs-agency-financial-report.pdf>.

27 ¹⁸ U.S. Gov’t Accountability Off., *supra* note 6 (capitalization altered).

28 ¹⁹ See U.S. Nat’l Science Found., *supra* note 7 at 6.

1 community and the National Science Board (“NSB”), which independently oversees NSF and provides
 2 policy direction to the agency.²⁰ In addition to NSB’s oversight, various Congressional committees also
 3 independently oversee NSF’s activities.²¹ And to ensure adherence to the long-term objectives set out in
 4 its strategic plans, NSF publishes performance reports on an annual basis, like many of the other federal
 5 science agencies.²² Both the strategic plans and annual performance reports, detailing NSF’s activities,
 6 awards, and appropriated funds, are made publicly available to ensure full transparency with the American
 7 public.

8 NSF’s elaborate combination of transparency, detailed strategic plans, broad STEM community
 9 participation, and robust independent oversight all ensure that NSF acts in accordance with its mission
 10 and shows no indications of abuse. Thus, there is no evidence that the terminations of probationary
 11 employees’ jobs, particularly at the federal science agencies, will reduce any fraud or abuse of government
 12 resources or authority.

13 **III. If Not Enjoined, the Terminations at Federal Science Agencies Will Harm the United
 14 States’s Scientific Dominance, Innovation, and Economic Competitiveness and Will
 15 Significantly Damage the Public Interest.**

16 Recognizing the importance of maintaining the nation’s scientific leadership, APS has long called
 17 on the federal government to “[p]rioritize agencies that support physical sciences” because “[n]ot
 18 investing in [research and development] today weakens our economic competitiveness and national
 19 security, creating both financial and workforce deficits with long-term repercussions.”²³ In particular,

21 ²⁰ See generally *id.*

22 ²¹ See, e.g., House Comm. on Science, Space and Tech., *Research and Technology*, <https://science.house.gov/subcommittee-research-technology> (last visited Mar. 10, 2025) (explaining the
 23 subcommittee’s oversight over some federal science agencies, including NSF).

24 ²² See, e.g., U.S. Nat’l Science Found., *FY 2024 Annual Performance Report*, <https://nsf.gov-resources.nsf.gov/files/nsf25003.pdf> (last visited Mar. 10, 2025); U.S. Dep’t of Health and Human Servs., *FY 2025 Annual Performance Plan and Report*, <https://www.hhs.gov/sites/default/files/fy2025-performance-plan.pdf> (last visited Mar. 10, 2025).

25 ²³ Am. Physical Soc’y, *Defending Our Future: Preventing a U.S. Science Recession*, <https://cvd.aps.org/img/defending-our-future.pdf> (last visited Mar. 10, 2025).

1 APS has raised the alarm with the federal government about the growing STEM workforce crisis because
 2 the government “plays an essential role in creating America’s STEM workforce” to help avert any such
 3 crisis.²⁴ Thus, APS’s support for preliminary relief preventing the terminations at federal science agencies
 4 underscores its view that the terminations threaten U.S.’s global scientific leadership and economic
 5 competitiveness, as evident through the examples discussed above, while also contributing to a potential
 6 workforce crisis by damaging the careers of STEM professionals serving the public.

7 These harmful effects spread far beyond the scientists and other STEM professionals who have
 8 been fired. Among other things, these terminations hinder efficiency and innovation, as organizations that
 9 downsize their workforce “lack resources” and “may not be able to afford experimenting with new ideas
 10 and develop new technologies . . . or take risks on innovative projects.”²⁵ Moreover, “[a]mong surviving
 11 employees, downsizing creates a high level of stress, along with poor morale and even guilt,”²⁶ often
 12 described as “survivor’s remorse.” This demoralizing effect is typically observed in remaining employees
 13 because downsizing forces them to take on additional workload and increases their own “expectation of
 14 lay-off[s] in future rounds of downsizing.”²⁷ In other words, when already efficient organizations with
 15 streamlined processes like NSF are forced to reduce their workforce, the remaining employees experience
 16 diminished productivity and burnout, risking the mission of the organization.²⁸

17 The indiscriminate and abrupt nature of the terminations makes it more difficult for those same
 18 federal science agencies to later attract competitive talent. Given the way in which these terminations
 19 were conducted, the agencies will take a reputational hit, and fired employees may be unlikely to return,

22 ²⁴ *Id.*

23 ²⁵ Boumediene Ramdani et al., *The Effect of Downsizing on Innovation Outputs: The Role of Resource Slack and Constraints*, 46 Austl. J. Mgmt. 346, 349 (2021).

24 ²⁶ Bahaudin G. Mujtaba, *Workplace Management Lessons on Employee Recruitment Challenges, Furloughs, and Layoffs During the Covid-19 Pandemic*, J. Hum. Res. Sustainability Stud. 13, 26 (2022).

25 ²⁷ Ramdani, *supra* note 25, at 349.

26 ²⁸ See Mujtaba, *supra* note 26, at 18, 21, 23 (explaining that downsizing can severely damage the work ethic of remaining employees and overall company commitment).

1 jeopardizing the agencies' abilities to secure talent in the future.²⁹ Those consequences are particularly
 2 damaging for the federal science agencies which rely on a specialized and highly skilled science and
 3 technology talent pool. Accordingly, widespread terminations without just cause elicit punitive reactions
 4 from both remaining employees and prospective candidates.

5 The United States's leadership in science, technology, and innovation depends on the nation's
 6 ability to educate, recruit, *and* retain the best and brightest. The pace of scientific discovery and the
 7 translation of those discoveries into usable technologies has greatly accelerated in the past decades,
 8 resulting in a highly competitive world where nations are now challenging the U.S.'s leadership in science,
 9 technology, and innovation. To remain competitive, the "U.S. must be a STEM talent powerhouse" and
 10 federal science agencies must accordingly continue to capitalize on three key advantages: (1) being a
 11 destination of choice for the best and brightest scientists and other STEM professionals to work, (2)
 12 building a robust STEM education pipeline in all regions of the country, and (3) providing an environment
 13 that encourages and inspires innovation.³⁰ Unfortunately, the Executive Branch's broad-brush termination
 14 drive, which has resulted in the firing of many employees at federal science agencies contributes to the
 15 loss of both of those advantages by reducing the skilled scientific workforce, overwhelming the bandwidth
 16 of existing employees, and risking the ability to secure competitive talent in the future.

17 CONCLUSION

18 The government provides no evidence that the abrupt terminations at federal science agencies
 19 increase government efficiency or reduce waste, fraud, and abuse, the stated goals behind its actions.
 20 Indeed, many of the federal science agencies, like NSF, have strong records of efficiency and adherence
 21 to their missions. Moreover, these terminations jeopardize U.S.'s global scientific leadership, risking

22
 23²⁹ Cf. *id.* at 22 ("Sadly, due to mistakes made during the layoffs, many employees in 2021 and early 2022
 24 are not returning to the same firms where they worked prior to the pandemic."); Bahaudin G. Mujtaba and
 25 Tipakorn Senathip, *Layoffs and Downsizing Implications for the Leadership Role of Human Resources*, J.
 26 Serv. Science Mgmt. 209, 216 (2020) ("Unfortunately, many companies seem to terminate employees
 27 indiscriminately or based on higher salary levels, and as a result, face the consequences of severely
 28 weakening their skilled talent pool.").

³⁰ U.S. Nat'l Science Found., *supra* note 7, at 19.

1 innovation and potentially diminishing the STEM talent pool. Because Plaintiffs seek to reverse these
2 terminations in this litigation, APS supports their efforts to restore the employment of fired federal
3 employees, and preliminarily enjoin Defendants from engaging in any further broad terminations of
4 probationary and other federal employees.

5 Respectfully submitted,

6 March 11, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on March 11, 2025, I filed the foregoing document via the Court's CM/ECF system. The document will be served electronically on counsel of record for the parties.

/s/ Sarah E. Harrington
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